# Spawning and Egg Masses of *Siphonaria tasmanica* Tenison Woods, 1876 from Victoria

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Information is available on spawning and egg masses in four species of the marine pulmonate genus *Siphonaria* from south-eastern Australia. *S.denticulata* from New South Wales (Anderson, 1965; Creese, 1980) and *S.diemenensis* and *S.baconi* from Victoria (Mapstone, 1978) deposit benthic egg ribbons from which planktotrophic larvae hatch. However, *S.funiculata* (nominal form, *sensu* Jenkins, 1981) has pelagic egg masses (Creese, 1980). This note reports observations of spawning and egg masses of *S.tasmanica* at Griffith Point, San Remo, Victoria from 1979 to 1982.

Egg masses of *S.tasmanica* are transparent and jelly-like in appearance (Fig.1), and variable in size (length 12-17 mm; width 5-7 mm). The eggs are white and have a mean diameter ($\pm$ S.D.) of 94.9 $\pm$ 6.1 $\mu$m. Each is contained within a capsule (length 158.8 $\pm$ 10.4 $\mu$m; width 130.4 $\pm$ 8.6 $\mu$m). The capsules are distributed evenly throughout the egg mass except in a surface layer (0.4-0.7 mm thick) in which no capsules are found. The egg size of *S.tasmanica* is comparable to the other species of *Siphonaria* and suggests that *S.tasmanica* also has planktotrophic larvae. The time from spawning to hatching of an egg mass in the laboratory (22°C) is 6 days.

Egg masses spawned during low tide adhere weakly to the substratum and are removed by the first wave splash. Egg masses were only found in the months of January and February and the times of spawning did not appear related to phases of the moon as occurs in other species of *Siphonaria* (Parry, 1977; Mapstone, 1978; Creese, 1980). Egg masses were usually found on days of either steady rain or considerable wave splash, both conditions likely to reduce the risk of desiccation of egg masses before they are washed from the rock.

The pelagic egg masses of *S.tasmanica* from Victoria are similar in appearance and hatching time to those described by Creese (1980) for *S.funiculata* from New South Wales. Both species occur higher on the shore than their congeners, *S.diemenensis* and *S.denticulata*, which have benthic egg masses. Creese (1980) suggested that the pelagic egg masses of *S.funiculata* in New South Wales may, in part, be an adaptation to life in the upper littoral zone as the benthic egg masses of *S.denticulata* suffered mortality due to desiccation when transplanted to higher levels. A similar adaptive explanation may account for the contrasting reproductive modes seen in Victorian Siphonariidae.

## LITERATURE CITED

Anderson, D.T., 1965. Further observations on the life-histories of littoral gastropods in New South Wales. Proc. Linn. Soc. N.S.W. *90:* 242-251.

Creese, R.G., 1980. Reproductive cycles and fecundities of two species of *Siphonaria* (Mollusca: Pulmonata) in South-Eastern Australia. Aust. J. Mar. Freshwater Res. *31:* 37-47.

Jenkins, B.W., 1981. *Siphonaria funiculata* Reeve (Siphonariidae: Pulmonata); a re-description making *S.virgulata* Hedley a geographical variant of *S.funiculata*. J. Malac. Soc. Aust. *5:* 1-15.

Mapstone, G.M., 1978. Egg capsules and early development in *Siphonaria diemenensis* (Quoy and Gaimard, 1833) and *Siphonaria baconi* (Reeve, 1856). J. Malac. Soc. Aust. *4:* 85-92.

Parry, G.D., 1977. Life history strategies of five species of intertidal limpet. Ph.D. Thesis, University of Melbourne.

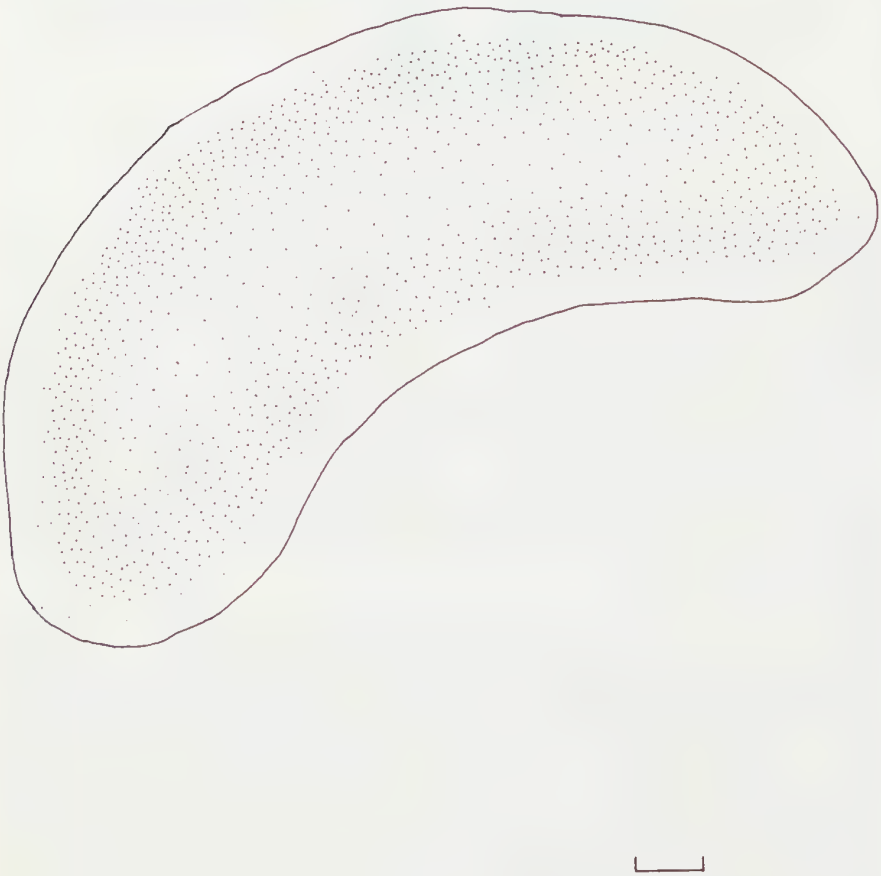

Figure 1

Egg Mass of *S.tasmanica*.

(Scale bar = 1 mm)